SEQUENCE LISTING

<110> CHOO, Qui-Lim
HOUGHTON, Michael
SCOTT, Elizabeth
WEINER, Amy

<120> METHODS AND REAGENTS FOR TREATING, PREVENTING AND DIAGNOSING BUNYAVIRUS INFECTION

<130> 21454

<140> US 10/580,050
<141> 2006-05-19

<150> PCT/US04/039333
<151> 2004-11-19

<160> 191

<170> PatentIn version 3.3

<210> 1
<211> 4527
<212> DNA
<213> La Crosse virus

<400> 1
agtagtgtac taccaagtat agataacgtt tgaatattaa agttttgaat caaagccaaa 60
gatgatttgt atattggtgc taattacagt tgcagctgca agcccagtgt atcaaaggtg 120
tttccaagat ggggctatag tgaagcaaaa cccatccaaa gaagcagtta cagaggtgtg 180
cctgaaagat gatgttagca tgatcaaaac agaggccagg tatgtaagaa atgcaacagg 240
agtttttca aataatgtcg caataaggaa atggctagtc tctgattggc atgattgcag 300
gcctaagaag atcgttgggg gacacatcaa tgtaatagaa gttggtgatg acctgtcact 360
ccatactgaa tcatatgttt gcagcgcaga ttgtaccata ggtgtagaca aagagactgc 420
acaggtcagg cttcagacag ataccacaaa tcattttgaa attgcaggca ctactgtgaa 480
gtcaggatgg ttcaagagca cgacatatat aactcttgat caaacttgcg aacaccttaa 540
agtttcctgc ggcccaaaat ctgtacagtt ccatgcctgc ttcaatcagc atatgtcttg 600
cgtcagattt ttacacagga caatattgcc tggctctata gccaattcca tatgtcagaa 660
tatcgaaatc ataattttag ttacacttac tctattaatc tttatattgt taagcatttt 720
aagtaagact tatatatgtt atttattaat gcctatattc atccccatag catatatata 780
cggtataatt tacaataagt cgtgcaaaaa atgcaaatta tgtggcttag tgtatcatcc 840
attcacagag tgtggcacac attgtgtctg tggtgcccgc tatgatactt cagatagaat 900
gaaactgcat agagcttctg gattgtgccc tggttataaa agcctaagag ctgccagagt 960
catgtgcaag tcgaaagggc ctgcatcaat attgtctata attactgcgg tactggtctt 1020
aacctttgtg acaccaatca actccatggt tttaggagag agtaaagaaa cctttgaact 1080
tgaagatctt ccagacgaca tgttggaaat ggcatcgaga ataaattctt attatctcac 1140
ctgtatcttg aattatgctg taagctgggg tcttgttatc attggattgt tgatcgggct 1200
gctttttaag aaataccagc acagattctt aaatgtttac gcaatgtact gtgaagaatg 1260
tgacatgtat catgacaagt ctgggttgaa aagacatggt gatttcacca acaaatgcag 1320
acagtgcaca tgtggtcaat atgaagatgc tgcaggtttg atggctcaca ggaaaaccta 1380
taactgctta gtgcagtaca aagcaaagtg gatgatgaac ttcctgataa tttacatatt 1440
cttaattttg atcaaagatt ctgctatagt tgtacaagct gctggaactg acttcaccac 1500
ctgcctagag actgagagta taaattggaa ctgcactggg ccatttttga acctcgggaa 1560
ttgccaaaag caacaaaaga aagaacctta caccaacatt gcaactcagt taaagggact 1620

```
aaaggcaatt tccgtactag atgtccctat aataacaggg ataccagatg atattgcggg   1680
tgctttaaga tatatagaag agaaggaaga tttccatgtc cagctaacta tagaatatgc   1740
gatgttaagc aaatactgtg actattatac ccaattctca gataactcag gatacagtca   1800
gacaacatgg agagtgtact taaggtctca tgattttgaa gcctgtatac tatatccaaa   1860
tcagcacttt tgcagatgtg taaaaaatgg tgagaagtgc agcagctcca attgggactt   1920
tgccaatgaa atgaaagatt attactctgg gaaacaaaca aagtttgaca aggacttaaa   1980
tctagcccta acagctttgc atcatgcctt caggggggacc tcatctgcat atatagcaac   2040
aatgctctca aaaaagtcca atgatgactt gattgcatac acaaataaga taaaaacaaa   2100
attcccaggt aatgcattgt tgaaggctat aatagattat atagcatata tgaaaagttt   2160
gccaggtatg gcaaatttca aatatgatga attctgggat gaattactgt acaaacccaa   2220
cccagcaaag gcctcaaacc ttgctagagg aaaggagtca tcttacaact tcaaactagc   2280
aatttcatca aagtctataa aaacctgcaa gaatgttaag gatgttgcct gcttatcgcc   2340
aaggtcaggt gctatatatg cttcaataat tgcgtgtggt gaacccaatg ggccaagtgt   2400
gtataggaaa ccatcaggtg gtgtattcca atctagcact gatcggtcta tatactgctt   2460
gctggatagc cattgtctag aagaatttga ggccatcggc caggaggagc tggatgcggt   2520
aaagaaatcc aaatgttggg aaattgaata tcctgacgta aagctcatcc aagaaggcga   2580
tgggactaaa agctgtagaa tgaaagattc tgggaactgc aatgttgcaa ctaacagatg   2640
gccagtgata caatgtgaga atgacaaatt ttactactca gagcttcaaa aagattatga   2700
caaagctcaa gatattggtc actattgctt aagccctgga tgtactactg tccggtaccc   2760
tattaatcca aagcacatct ctaactgtaa ttggcaagta agcagatcta gcatagcgaa   2820
gatagatgtg cacaatattg aggatattga gcaatataag aaagctataa ctcagaaact   2880
tcaaacgagc ctatctctat tcaagtatgc aaaaacaaaa aacttgccgc acatcaaacc   2940
aatttataaa tatataacta tagaaggaac agaaactgca gaaggtatag agagtgcata   3000
cattgaatca gaagtacctg cattggctgg gacatctatc ggattcaaaa tcaattctaa   3060
agagggcaag cacttgctag atgttatagc atatgtaaaa agtgcctcat actcttcagt   3120
gtatacaaaa ttgtactcaa ctggcccaac atcagggata aatactaaac atgatgaatt   3180
gtgtactggc ccatgcccag caaatatcaa tcatcaggtt gggtggctga catttgcaag   3240
agagaggaca agctcatggg gatgcgaaga gtttggttgc ctggctgtaa gtgatgggtg   3300
tgtatttgga tcatgccaag atataataaa agaagaacta tctgtctata ggaaggagac   3360
cgaggaagtg actgatgtag aactgtgttt gacattttca gacaaaacat actgtacaaa   3420
cttaaaccct gttaccccta ttataacaga tctatttgag gtacagttca aaactgtaga   3480
gacctacagc ttgcctagaa ttgttgctgt gcaaaaccat gagattaaaa ttgggcaaat   3540
aaatgattta ggagtttact ctaagggttg tgggaatgtt caaaaggtca atggaactat   3600
ttatggcaat ggagttccca gatttgacta cttatgccat ttagctagca ggaaggaagt   3660
cattgttaga aaatgcttcg acaatgatta ccaagcatgc aaatttcttc aaagccctgc   3720
tagttacaga cttgaagaag acagtggcac tgtgaccata attgactaca aaaagatttt   3780
aggaacaatc aagatgaagg caattttagg agatgtcaaa tataaaacat ttgctgatag   3840
tgtcgatata accgcagaag ggtcatgcac cggctgtatt aactgcttcg aaaatatcca   3900
ttgcgaatta acgttgcaca ccacaattga agccagctgc ccaattaaaa gctcgtgcac   3960
agtatttcat gacaggattc ttgtgactcc aaatgaacac aaatatgcat tgaaaatggt   4020
gtgcacagaa aagccaggga acacactcac aattaaagtc tgcaatacta aagttgaagc   4080
atctatggcc cttgtagacg caaagcctat catagaacta gcaccagttg atcagacagc   4140
atatataaga gaaaaagatg aaaggtgtaa aacttggatg tgtagggtaa gagatgaagg   4200
actgcaggtc atcttggagc catttaaaaa tttatttgga tcttatattg ggatatttta   4260
cacatttatt atatctatag tagtattatt ggttattatc tatgtactac tacctatatg   4320
ctttaagtta agggataccc ttagaaagca tgaagatgca tataagagag agatgaaaat   4380
tagatagggg atctatgcag aacaaaattg agtcctgtat tatatacttc tatttgtagt   4440
atagctgttg ttaagtgggg ggtggggaac taacaacagc gtaaatttat tttgcaaaca   4500
ttattttata cttggtagca cactact                                      4527
```

<210> 2
<211> 299
<212> PRT
<213> La Crosse virus

<400> 2

```
Met Ile Cys Ile Leu Val Leu Ile Thr Val Ala Ala Ala Ser Pro Val
1               5                  10                  15

Tyr Gln Arg Cys Phe Gln Asp Gly Ala Ile Val Lys Gln Asn Pro Ser
            20                  25                  30

Lys Glu Ala Val Thr Glu Val Cys Leu Lys Asp Asp Val Ser Met Ile
        35                  40                  45

Lys Thr Glu Ala Arg Tyr Val Arg Asn Ala Thr Gly Val Phe Ser Asn
    50                  55                  60

Asn Val Ala Ile Arg Lys Trp Leu Val Ser Asp Trp His Asp Cys Arg
65                  70                  75                  80

Pro Lys Lys Ile Val Gly Gly His Ile Asn Val Ile Glu Val Gly Asp
                85                  90                  95

Asp Leu Ser Leu His Thr Glu Ser Tyr Val Cys Ser Ala Asp Cys Thr
            100                 105                 110

Ile Gly Val Asp Lys Glu Thr Ala Gln Val Arg Leu Gln Thr Asp Thr
        115                 120                 125

Thr Asn His Phe Glu Ile Ala Gly Thr Thr Val Lys Ser Gly Trp Phe
    130                 135                 140

Lys Ser Thr Thr Tyr Ile Thr Leu Asp Gln Thr Cys Glu His Leu Lys
145                 150                 155                 160

Val Ser Cys Gly Pro Lys Ser Val Gln Phe His Ala Cys Phe Asn Gln
                165                 170                 175

His Met Ser Cys Val Arg Phe Leu His Arg Thr Ile Leu Pro Gly Ser
            180                 185                 190

Ile Ala Asn Ser Ile Cys Gln Asn Ile Glu Ile Ile Ile Leu Val Thr
        195                 200                 205

Leu Thr Leu Leu Ile Phe Ile Leu Leu Ser Ile Leu Ser Lys Thr Tyr
    210                 215                 220

Ile Cys Tyr Leu Leu Met Pro Ile Phe Ile Pro Ile Ala Tyr Ile Tyr
225                 230                 235                 240

Gly Ile Ile Tyr Asn Lys Ser Cys Lys Lys Cys Lys Leu Cys Gly Leu
                245                 250                 255

Val Tyr His Pro Phe Thr Glu Cys Gly Thr His Cys Val Cys Gly Ala
            260                 265                 270

Arg Tyr Asp Thr Ser Asp Arg Met Lys Leu His Arg Ala Ser Gly Leu
        275                 280                 285
```

```
Cys Pro Gly Tyr Lys Ser Leu Arg Ala Ala Arg
    290                 295
```

<210> 3
<211> 984
<212> DNA
<213> La Crosse virus

<400> 3

```
agtagtgtac cccacttgaa tactttgaaa ataaattgtt gttgactgtt ttttacctaa     60
ggggaaatta tcaagagtgt gatgtcggat ttggtgtttt atgatgtcgc atcaacaggt    120
gcaaatggat ttgatcctga tgcagggtat atggacttct gtgttaaaaa tgcagaatta    180
ctcaaccttg ctgcagttag gatcttcttc ctcaatgccg caaaggccaa ggctgctctc    240
tcgcgtaagc cagagaggaa ggctaaccct aaatttggag agtggcaggt ggaggttatc    300
aataatcatt ttcctggaaa caggaacaac ccaattggta acaacgatct taccatccac    360
agattatctg ggtatttagc cagatgggtc cttgatcagt ataacgagaa tgatgatgag    420
tctcagcacg agttgatcag aacaactatt atcaacccaa ttgctgagtc taatggtgta    480
ggatgggaca gtgggccaga gatctatcta tcattctttc caggaacaga aatgtttttg    540
gaaactttca aattctaccc gctgaccatt ggaattcaca gagtcaagca aggcatgatg    600
gaccctcaat acctgaagaa ggccttaagg caacgctatg gcactctcac agcagataag    660
tggatgtcac agaaggttgc agcaattgct aagagcctga aggatgtaga gcagcttaaa    720
tggggaaaag gaggcctgag cgatactgct aaaacattcc tgcagaaatt tggcatcagg    780
cttccataaa tatggcatga ggcattcaaa ttaggttcta aattctaaat ttatatatgt    840
caatttgatt aattggttat ccaaaagggt tttcttaagg gaacccacaa aaatagcagc    900
taaatgggtg ggtggtaggg gacagcaaaa aactataaat caggtcataa ataaaataaa    960
atgtattcag tggggcacac tact                                          984
```

<210> 4
<211> 235
<212> PRT
<213> La Crosse virus

<400> 4

```
Met Ser Asp Leu Val Phe Tyr Asp Val Ala Ser Thr Gly Ala Asn Gly
1               5                  10                  15

Phe Asp Pro Asp Ala Gly Tyr Met Asp Phe Cys Val Lys Asn Ala Glu
            20                  25                  30

Leu Leu Asn Leu Ala Ala Val Arg Ile Phe Phe Leu Asn Ala Ala Lys
        35                  40                  45

Ala Lys Ala Ala Leu Ser Arg Lys Pro Glu Arg Lys Ala Asn Pro Lys
    50                  55                  60

Phe Gly Glu Trp Gln Val Glu Val Ile Asn Asn His Phe Pro Gly Asn
65                  70                  75                  80

Arg Asn Asn Pro Ile Gly Asn Asn Asp Leu Thr Ile His Arg Leu Ser
                85                  90                  95

Gly Tyr Leu Ala Arg Trp Val Leu Asp Gln Tyr Asn Glu Asn Asp Asp
```

```
            100                 105                 110

Glu Ser Gln His Glu Leu Ile Arg Thr Thr Ile Ile Asn Pro Ile Ala
        115                 120                 125

Glu Ser Asn Gly Val Gly Trp Asp Ser Gly Pro Glu Ile Tyr Leu Ser
    130                 135                 140

Phe Phe Pro Gly Thr Glu Met Phe Leu Glu Thr Phe Lys Phe Tyr Pro
145                 150                 155                 160

Leu Thr Ile Gly Ile His Arg Val Lys Gln Gly Met Met Asp Pro Gln
                165                 170                 175

Tyr Leu Lys Lys Ala Leu Arg Gln Arg Tyr Gly Thr Leu Thr Ala Asp
            180                 185                 190

Lys Trp Met Ser Gln Lys Val Ala Ala Ile Ala Lys Ser Leu Lys Asp
        195                 200                 205

Val Glu Gln Leu Lys Trp Gly Lys Gly Gly Leu Ser Asp Thr Ala Lys
    210                 215                 220

Thr Phe Leu Gln Lys Phe Gly Ile Arg Leu Pro
225                 230                 235
```

<210> 5
<211> 6980
<212> DNA
<213> La Crosse virus

<400> 5

```
agtagtgtac ccctatctac aaaacttaca gaaaattcag tcatatcaca atatatgcat     60
aatggactat caagagtatc aacaattctt ggctaggatt aatactgcaa gggatgcatg    120
tgtagccaag gatatcgatg ttgacctatt aatggccaga catgattatt ttggtagaga    180
gctgtgcaag tccttaaata tagaatatag gaatgatgta ccatttgtag atataatttt    240
ggatataagg cccgaagtag acccattaac catagatgca ccacatatta ccccagacaa    300
ttatctatat ataaataatg tgttatatat catagattat aaggtctctg tatcgaatga    360
aagcagtgtt ataacatatg acaaatatta tgagttaact agggacatat ccgatagatt    420
aagtattcca atagaaatag ttatcgtccg tatagaccct gtaagtaagg atttgcatat    480
taactctgat agatttaaag aactttaccc tacaatagtg gtggatataa acttcaatca    540
atttttcgac ttaaaacaat tactctatga aaaattcggt gatgatgaag aattcctatt    600
gaaagttgca catggtgact tcactcttac agcaccctgg tgcaagactg ggtgccctga    660
attttggaaa caccccattt ataaagaatt taaaatgagt atgccagtac ctgagcggag    720
gctctttgaa gaatctgtca agttcaatgc ttatgaatct gagagatgga atactaactt    780
ggttaaaatc agagaatata caaagaaaga ctattcagag catatttcaa aatctgcaaa    840
aaatattttc ctggctagtg gattttataa gcagccaaat aagaatgaga ttagtgaggg    900
gtggacatta atggttgaga gggttcaaga tcagagagaa atctcaaaat ctctccatga    960
ccagaaacct agcatacatt ttatatgggg agcccataac ccaggaaata gtaataatgc   1020
aaccttcaaa ctcatattgc tttcaaagtc cttacaaagc ataaaaggta tatcaactta   1080
cacagaagcg ttcaaatctt taggaaaaat gatggatatt ggagataagg ctattgagta   1140
tgaagaattc tgcatgtccc taaaaagcaa agcaagatca tcatggaagc aaataatgaa   1200
caaaaaatta gagcctaaac aaataaacaa tgcccttgtt ttatgggaac agcagtttat   1260
ggtaaataat gacctgatag acaaaagtga gaagttgaaa ttattcaaaa atttctgcgg   1320
```

tataggcaaa cacaagcaat tcaagaataa aatgctagag gatctagaag tgtcaaagcc 1380
caaaatatta gactttgatg acgcaaatat gtatctagct agcctaacca tgatggaaca 1440
gagtaagaag atattgtcca aaagcaatgg gttgaagcca gataatttta tactgaatga 1500
atttggatcc aaaatcaaag atgctaataa agaaacatat gacaatatgc acaaaatatt 1560
tgagacaaga tattggcaat gtatatccga cttctctact ctgatgaaaa atatcttatc 1620
tgtgtcccaa tataacaggc acaacacatt taggatagct atgtgtgcta ataacaatgt 1680
ctttgctata gtatttcctt cggctgacat aaaaactaag aaagcaactg tagtttatag 1740
cattatagtg ctgcataaag aggaagaaaa catattcaac ccaggatgtt tgcacggcac 1800
atttaagtgt atgaatgggt atatttccat atctagagct ataaggctag ataaagagag 1860
gtgccagaga attgtttcct cacctggact gtttttaaca acttgcctac tattcaaaca 1920
tgataatcca actctagtga tgagcgatat tatgaatttt tctatataca ctagcctgtc 1980
tatcacaaag agtgttctat ctttaacaga gccagcacgc tacatgatta tgaactcatt 2040
agctatctcc agcaatgtta aggactatat agcagagaaa ttttcccctt acacaaagac 2100
actgttcagt gtctatatga ctagactaat taaaaatgct tgctttgatg cttatgacca 2160
gagacagcgt gtccaactta gagatatata tttatctgat tatgacataa cccaaaaagg 2220
tattaaagac aatagagagc taacaagtat atggttccct ggtagtgtaa cattaaagga 2280
gtatttaaca caaatatact taccatttta ttttaatgct aaaggactac atgagaagca 2340
ccatgtcatg gtggatctag caaagactat attagaaata gagtgcgaac agagggaaaa 2400
cataaaggag atatggtcta caaattgtac caaacagaca gtgaacctta aaattttgat 2460
ccattccttg tgcaagaatt tactagcaga cacttcaaga cacaaccact tgcggaacag 2520
aatagaaaat aggaacaatt ttagaaggtc tataacaact atttcaacat ttacaagttc 2580
aaagtcttgc ctcaaaatag gggactttag aaaagagaaa gagctgcagt cagttaaaca 2640
gaagaaaatc ttagaggtgc agagtcgcaa aatgagatta gcaaacccaa tgttcgtgac 2700
agatgaacaa gtatgccttg aagttgggca ctgcaattat gagatgctga ggaatgctat 2760
gccgaattat acagattata tatcaactaa agtatttgat aggttatatg agttattaga 2820
taaaggagtt ttgacagaca agcctgttat agagcaaata atggatatga tggtcgacca 2880
caaaaagttc tatttcacat ttttcaataa aggccagaaa acgtcaaagg atagagagat 2940
attcgttgga gaatatgaag ctaaaatgtg tatgtacgca gttgagagaa tagcaaaaga 3000
aagatgtaaa ttaaatcctg atgaaatgat atctgagccg ggtgatggca agttgaaggt 3060
gttggagcaa aaatcagaac aagaaattcg attcttggtc gagactacaa ggcaaaagaa 3120
tcgtgaaatc gatgaggcaa ttgaagcatt agctgcagaa ggatatgaga gtaatctaga 3180
aaaaattgaa aagctttcac ttggcaaagc aaagggccta aagatggaaa taaatgcaga 3240
tatgtctaaa tggagtgctc aggatgtttt ttataaatat ttctggctca tagccttaga 3300
ccctatcctc tacccacagg aaaaagagag aatattatac tttatgtgca actacatgga 3360
taaagaattg atactgccag atgaattatt attcaatttg ctggaccaaa aagttgcata 3420
ccagaatgat ataatagcta ctatgactaa tcaattaaat tcaaatacag ttctgataaa 3480
gagaaattgg ctccaaggga atttcaacta cacctcaagt tacgtccata gctgcgcaat 3540
gtctgtgtat aaagaaatat taaaagaggc cataacatta ctagacgggt ctatattagt 3600
caactcatta gtccattcgg atgataacca aacatcgata acaatagttc aggataagat 3660
ggaaaatgat aaaattatag attttgcaat gaaagaattt gagagagcct gtttgacatt 3720
tggatgccaa gcaaatatga aaaagacata tgtaacaaat tgcataaaag agtttgtttc 3780
attatttaac ttgtacggcg aacccttttc aatatatggc agattcctat taacatctgt 3840
gggtgattgt gcctatatag ggccttatga agatttagct agtcgaatat catcagccca 3900
gacagccata aagcatggtt gtccacccag tctagcatgg gtgtccatag caataagtca 3960
ttggatgacc tctctgacat acaacatgct accagggcag tcaaatgacc caattgatta 4020
tttccctgca gaaaatagga aggatatccc tatagaattg aatggtgtat tagatgctcc 4080
attgtcaatg attagtacag ttggattgga atctgggaat ttatacttct tgataaagtt 4140
gttgagcaaa tataccccgg tcatgcagaa aagagagtca gtagtcaacc aaatagctga 4200
agttaagaac tggaaggtcg aggatctaac agacaatgaa atatttagac ttaaaatact 4260
cagatattta gttctagatg cagagatgga ccctagtgat attatgggtg agacaagcga 4320
catgagaggg aggtctattt tgacacctag aaaattcaca acagcaggca gtttaaggaa 4380
attatattct ttcagtaagt accaggatag actgtcttcc cctggaggca tggttgaatt 4440
gttcacttat ttgcttgaga aacctgagtt gttagtgact aaaggggaag atatgaaaga 4500
ttatatggaa tctgtgatat tccgatataa ttccaaaagg ttcaaagaaa gtttgtcaat 4560
acagaaccca gcacaattat ttatagaaca gatattgttc tcacataagc ccataataga 4620

```
cttttctggt atcagggaca aatatataaa cctacatgat agtagagctc tagagaagga   4680
acctgacata ttaggaaaag taacatttac agaggcttat agattattaa tgagggacct   4740
gtctagccta gaactaacca atgatgacat tcaagtaatt tattcttaca taatacttaa   4800
tgaccctatg atgataacta ttgcaaacac acatatattg tcaatatacg ggagtcctca   4860
acggaggatg ggcatgtcct gttcaacgat gccagaattt agaaatttaa aattaataca   4920
tcattcccca gccttagttt tgagagcata tagtaaaaat aatcctgaca tccagggtgc   4980
tgatcccacg gaaatggcta gagatttagt tcatctgaaa gagtttgttg agaacacaaa   5040
tttagaagaa aaaatgaaag ttaggattgc tataaatgaa gcagagaaag gacaacggga   5100
tatagtcttt gaactaaaag agatgactag attttatcag gtttgctatg agtatgtcaa   5160
atctacagaa cacaagataa aagtcttcat tctcccgaca aaatcataca caacaacaga   5220
tttctgttca ctcatgcagg ggaatttaat aaaagataaa gagtggtaca cagttcacta   5280
cctaaaacag atattgtctg gtggccataa agccataatg cagcataatg ccactagtga   5340
gcaaaatatt gcttttgagt gtttcaaatt aattacccat tttgcagact cattcataga   5400
ttcattatct aggtcagctt ttttgcagtt gataatagat gaattcagtt ataaagatgt   5460
gaaggttagc aaactttatg acataataaa gaatgggtat aatcgaactg acttcatacc   5520
attgcttttt agaactggcg atttaagaca agctgactta gacaagtatg atgctatgaa   5580
aagtcatgag agggttacat ggaatgattg gcaaacatct cgtcacttgg acatgggctc   5640
aattaatcta acaataaccg gttacaatag atcaataaca ataatcggag aagataacaa   5700
attgacatat gcagaattat gtctgactag gaaaactcct gagaatataa ctataagtgg   5760
cagaaaattg ctaggtgcaa ggcatggact taaatttgaa aatatgtcca aaatccaaac   5820
atacccaggc aattattata taacatatag aaagaaagat cgccaccagt ttgtatacca   5880
gatacattct catgaatcaa taacaaggag gaatgaagag catatggcta tcaggaccag   5940
aatatacaat gaaataactc cagtatgtgt agttaacgtt gcagaggtgg atggggacca   6000
acgtatattg ataagatctt tagactatct aaataatgat atattttctc tttcaaggat   6060
taaagtcggg cttgacgaat ttgcaacaat aaaaaaagca cactttagta aaatggtctc   6120
atttgaagga cccccaatta agacagggct cctcgacctt actgaattga tgaaatctca   6180
agatttgctt aaccttaatt atgataatat aaggaatagc aacttgatat ctttttcaaa   6240
attgatttgc tgtgaggggt cagataatat aaatgatggg ttagagtttc tgtccgatga   6300
ccctatgaac tttacagagg gtgaagcaat acattcaaca ccgatcttta atatatatta   6360
ctcaaaaaga ggagaaagac atatgacata caggaatgca attaaattac tgatagaaag   6420
agaaactaag atttttgaag aagctttcac attcagtgag aatggcttca tatcgccaga   6480
gaatcttggt tgcttagaag cagtagtatc attaataaaa ttgttgaaaa ctaatgagtg   6540
gtccacagtt atagataaat gtattcatat atgtttaata aagaatggta tggatcacat   6600
gtaccattca tttgatgtcc ctaaatgttt tatggggaat cctatcacta gagacatgaa   6660
ttggatgatg tttagagaat tcatcaatag tttaccaggg acagatatac caccatggaa   6720
tgtcatgaca gagaacttca aaaagaaatg tattgctctg ataaactcta agttagaaac   6780
acagagagat ttctcagaat tcactaaact gatgaaaaag gaaggtggga ggagtaatat   6840
agaatttgat tagtagttat gagtttacag agaacctaca attaggctat aaatttggga   6900
gggttttgga aattggctaa aattcaaaaa gagggggatt aacagcaact gtataaattt   6960
gtagataggg gcacactact                                              6980
```

<210> 6
<211> 2263
<212> PRT
<213> La Crosse virus

<400> 6

```
Met Asp Tyr Gln Glu Tyr Gln Gln Phe Leu Ala Arg Ile Asn Thr Ala
1               5                   10                  15

Arg Asp Ala Cys Val Ala Lys Asp Ile Asp Val Asp Leu Leu Met Ala
            20                  25                  30

Arg His Asp Tyr Phe Gly Arg Glu Leu Cys Lys Ser Leu Asn Ile Glu
```

```
        35                  40                  45

Tyr Arg Asn Asp Val Pro Phe Val Asp Ile Ile Leu Asp Ile Arg Pro
    50                  55                  60

Glu Val Asp Pro Leu Thr Ile Asp Ala Pro His Ile Thr Pro Asp Asn
65                  70                  75                  80

Tyr Leu Tyr Ile Asn Asn Val Leu Tyr Ile Ile Asp Tyr Lys Val Ser
                85                  90                  95

Val Ser Asn Glu Ser Ser Val Ile Thr Tyr Asp Lys Tyr Tyr Glu Leu
            100                 105                 110

Thr Arg Asp Ile Ser Asp Arg Leu Ser Ile Pro Ile Glu Ile Val Ile
        115                 120                 125

Val Arg Ile Asp Pro Val Ser Lys Asp Leu His Ile Asn Ser Asp Arg
    130                 135                 140

Phe Lys Glu Leu Tyr Pro Thr Ile Val Val Asp Ile Asn Phe Asn Gln
145                 150                 155                 160

Phe Phe Asp Leu Lys Gln Leu Leu Tyr Glu Lys Phe Gly Asp Asp Glu
                165                 170                 175

Glu Phe Leu Leu Lys Val Ala His Gly Asp Phe Thr Leu Thr Ala Pro
            180                 185                 190

Trp Cys Lys Thr Gly Cys Pro Glu Phe Trp Lys His Pro Ile Tyr Lys
        195                 200                 205

Glu Phe Lys Met Ser Met Pro Val Pro Glu Arg Arg Leu Phe Glu Glu
    210                 215                 220

Ser Val Lys Phe Asn Ala Tyr Glu Ser Glu Arg Trp Asn Thr Asn Leu
225                 230                 235                 240

Val Lys Ile Arg Glu Tyr Thr Lys Lys Asp Tyr Ser Glu His Ile Ser
                245                 250                 255

Lys Ser Ala Lys Asn Ile Phe Leu Ala Ser Gly Phe Tyr Lys Gln Pro
            260                 265                 270

Asn Lys Asn Glu Ile Ser Glu Gly Trp Thr Leu Met Val Glu Arg Val
        275                 280                 285

Gln Asp Gln Arg Glu Ile Ser Lys Ser Leu His Asp Gln Lys Pro Ser
    290                 295                 300

Ile His Phe Ile Trp Gly Ala His Asn Pro Gly Asn Ser Asn Asn Ala
305                 310                 315                 320

Thr Phe Lys Leu Ile Leu Leu Ser Lys Ser Leu Gln Ser Ile Lys Gly
                325                 330                 335
```

```
Ile Ser Thr Tyr Thr Glu Ala Phe Lys Ser Leu Gly Lys Met Met Asp
            340                 345                 350

Ile Gly Asp Lys Ala Ile Glu Tyr Glu Glu Phe Cys Met Ser Leu Lys
        355                 360                 365

Ser Lys Ala Arg Ser Ser Trp Lys Gln Ile Met Asn Lys Lys Leu Glu
    370                 375                 380

Pro Lys Gln Ile Asn Asn Ala Leu Val Leu Trp Glu Gln Gln Phe Met
385                 390                 395                 400

Val Asn Asn Asp Leu Ile Asp Lys Ser Glu Lys Leu Lys Leu Phe Lys
                405                 410                 415

Asn Phe Cys Gly Ile Gly Lys His Lys Gln Phe Lys Asn Lys Met Leu
            420                 425                 430

Glu Asp Leu Glu Val Ser Lys Pro Lys Ile Leu Asp Phe Asp Asp Ala
        435                 440                 445

Asn Met Tyr Leu Ala Ser Leu Thr Met Met Glu Gln Ser Lys Lys Ile
    450                 455                 460

Leu Ser Lys Ser Asn Gly Leu Lys Pro Asp Asn Phe Ile Leu Asn Glu
465                 470                 475                 480

Phe Gly Ser Lys Ile Lys Asp Ala Asn Lys Glu Thr Tyr Asp Asn Met
                485                 490                 495

His Lys Ile Phe Glu Thr Arg Tyr Trp Gln Cys Ile Ser Asp Phe Ser
            500                 505                 510

Thr Leu Met Lys Asn Ile Leu Ser Val Ser Gln Tyr Asn Arg His Asn
        515                 520                 525

Thr Phe Arg Ile Ala Met Cys Ala Asn Asn Asn Val Phe Ala Ile Val
    530                 535                 540

Phe Pro Ser Ala Asp Ile Lys Thr Lys Lys Ala Thr Val Val Tyr Ser
545                 550                 555                 560

Ile Ile Val Leu His Lys Glu Glu Glu Asn Ile Phe Asn Pro Gly Cys
                565                 570                 575

Leu His Gly Thr Phe Lys Cys Met Asn Gly Tyr Ile Ser Ile Ser Arg
            580                 585                 590

Ala Ile Arg Leu Asp Lys Glu Arg Cys Gln Arg Ile Val Ser Ser Pro
        595                 600                 605

Gly Leu Phe Leu Thr Thr Cys Leu Leu Phe Lys His Asp Asn Pro Thr
    610                 615                 620
```

```
Leu Val Met Ser Asp Ile Met Asn Phe Ser Ile Tyr Thr Ser Leu Ser
625                 630                 635                 640

Ile Thr Lys Ser Val Leu Ser Leu Thr Glu Pro Ala Arg Tyr Met Ile
                645                 650                 655

Met Asn Ser Leu Ala Ile Ser Ser Asn Val Lys Asp Tyr Ile Ala Glu
            660                 665                 670

Lys Phe Ser Pro Tyr Thr Lys Thr Leu Phe Ser Val Tyr Met Thr Arg
        675                 680                 685

Leu Ile Lys Asn Ala Cys Phe Asp Ala Tyr Asp Gln Arg Gln Arg Val
    690                 695                 700

Gln Leu Arg Asp Ile Tyr Leu Ser Asp Tyr Asp Ile Thr Gln Lys Gly
705                 710                 715                 720

Ile Lys Asp Asn Arg Glu Leu Thr Ser Ile Trp Phe Pro Gly Ser Val
                725                 730                 735

Thr Leu Lys Glu Tyr Leu Thr Gln Ile Tyr Leu Pro Phe Tyr Phe Asn
            740                 745                 750

Ala Lys Gly Leu His Glu Lys His His Val Met Val Asp Leu Ala Lys
        755                 760                 765

Thr Ile Leu Glu Ile Glu Cys Glu Gln Arg Glu Asn Ile Lys Glu Ile
    770                 775                 780

Trp Ser Thr Asn Cys Thr Lys Gln Thr Val Asn Leu Lys Ile Leu Ile
785                 790                 795                 800

His Ser Leu Cys Lys Asn Leu Leu Ala Asp Thr Ser Arg His Asn His
                805                 810                 815

Leu Arg Asn Arg Ile Glu Asn Arg Asn Asn Phe Arg Arg Ser Ile Thr
            820                 825                 830

Thr Ile Ser Thr Phe Thr Ser Ser Lys Ser Cys Leu Lys Ile Gly Asp
        835                 840                 845

Phe Arg Lys Glu Lys Glu Leu Gln Ser Val Lys Gln Lys Lys Ile Leu
    850                 855                 860

Glu Val Gln Ser Arg Lys Met Arg Leu Ala Asn Pro Met Phe Val Thr
865                 870                 875                 880

Asp Glu Gln Val Cys Leu Glu Val Gly His Cys Asn Tyr Glu Met Leu
                885                 890                 895

Arg Asn Ala Met Pro Asn Tyr Thr Asp Tyr Ile Ser Thr Lys Val Phe
            900                 905                 910

Asp Arg Leu Tyr Glu Leu Leu Asp Lys Gly Val Leu Thr Asp Lys Pro
```

```
        915                 920                 925

Val Ile Glu Gln Ile Met Asp Met Met Val Asp His Lys Lys Phe Tyr
    930                 935                 940

Phe Thr Phe Phe Asn Lys Gly Gln Lys Thr Ser Lys Asp Arg Glu Ile
945                 950                 955                 960

Phe Val Gly Glu Tyr Glu Ala Lys Met Cys Met Tyr Ala Val Glu Arg
                965                 970                 975

Ile Ala Lys Glu Arg Cys Lys Leu Asn Pro Asp Glu Met Ile Ser Glu
            980                 985                 990

Pro Gly Asp Gly Lys Leu Lys Val  Leu Glu Gln Lys Ser  Glu Gln Glu
        995                 1000                1005

Ile Arg  Phe Leu Val Glu Thr  Thr Arg Gln Lys Asn  Arg Glu Ile
    1010                1015                1020

Asp Glu  Ala Ile Glu Ala Leu  Ala Ala Glu Gly Tyr  Glu Ser Asn
    1025                1030                1035

Leu Glu  Lys Ile Glu Lys Leu  Ser Leu Gly Lys Ala  Lys Gly Leu
    1040                1045                1050

Lys Met  Glu Ile Asn Ala Asp  Met Ser Lys Trp Ser  Ala Gln Asp
    1055                1060                1065

Val Phe  Tyr Lys Tyr Phe Trp  Leu Ile Ala Leu Asp  Pro Ile Leu
    1070                1075                1080

Tyr Pro  Gln Glu Lys Glu Arg  Ile Leu Tyr Phe Met  Cys Asn Tyr
    1085                1090                1095

Met Asp  Lys Glu Leu Ile Leu  Pro Asp Glu Leu Leu  Phe Asn Leu
    1100                1105                1110

Leu Asp  Gln Lys Val Ala Tyr  Gln Asn Asp Ile Ile  Ala Thr Met
    1115                1120                1125

Thr Asn  Gln Leu Asn Ser Asn  Thr Val Leu Ile Lys  Arg Asn Trp
    1130                1135                1140

Leu Gln  Gly Asn Phe Asn Tyr  Thr Ser Ser Tyr Val  His Ser Cys
    1145                1150                1155

Ala Met  Ser Val Tyr Lys Glu  Ile Leu Lys Glu Ala  Ile Thr Leu
    1160                1165                1170

Leu Asp  Gly Ser Ile Leu Val  Asn Ser Leu Val His  Ser Asp Asp
    1175                1180                1185

Asn Gln  Thr Ser Ile Thr Ile  Val Gln Asp Lys Met  Glu Asn Asp
    1190                1195                1200
```

```
Lys Ile  Ile Asp Phe Ala Met  Lys Glu Phe Glu Arg  Ala Cys Leu
    1205                 1210                 1215

Thr Phe  Gly Cys Gln Ala Asn  Met Lys Lys Thr Tyr  Val Thr Asn
    1220                 1225                 1230

Cys Ile  Lys Glu Phe Val Ser  Leu Phe Asn Leu Tyr  Gly Glu Pro
    1235                 1240                 1245

Phe Ser  Ile Tyr Gly Arg Phe  Leu Leu Thr Ser Val  Gly Asp Cys
    1250                 1255                 1260

Ala Tyr  Ile Gly Pro Tyr Glu  Asp Leu Ala Ser Arg  Ile Ser Ser
    1265                 1270                 1275

Ala Gln  Thr Ala Ile Lys His  Gly Cys Pro Pro Ser  Leu Ala Trp
    1280                 1285                 1290

Val Ser  Ile Ala Ile Ser His  Trp Met Thr Ser Leu  Thr Tyr Asn
    1295                 1300                 1305

Met Leu  Pro Gly Gln Ser Asn  Asp Pro Ile Asp Tyr  Phe Pro Ala
    1310                 1315                 1320

Glu Asn  Arg Lys Asp Ile Pro  Ile Glu Leu Asn Gly  Val Leu Asp
    1325                 1330                 1335

Ala Pro  Leu Ser Met Ile Ser  Thr Val Gly Leu Glu  Ser Gly Asn
    1340                 1345                 1350

Leu Tyr  Phe Leu Ile Lys Leu  Leu Ser Lys Tyr Thr  Pro Val Met
    1355                 1360                 1365

Gln Lys  Arg Glu Ser Val Val  Asn Gln Ile Ala Glu  Val Lys Asn
    1370                 1375                 1380

Trp Lys  Val Glu Asp Leu Thr  Asp Asn Glu Ile Phe  Arg Leu Lys
    1385                 1390                 1395

Ile Leu  Arg Tyr Leu Val Leu  Asp Ala Glu Met Asp  Pro Ser Asp
    1400                 1405                 1410

Ile Met  Gly Glu Thr Ser Asp  Met Arg Gly Arg Ser  Ile Leu Thr
    1415                 1420                 1425

Pro Arg  Lys Phe Thr Thr Ala  Gly Ser Leu Arg Lys  Leu Tyr Ser
    1430                 1435                 1440

Phe Ser  Lys Tyr Gln Asp Arg  Leu Ser Ser Pro Gly  Gly Met Val
    1445                 1450                 1455

Glu Leu  Phe Thr Tyr Leu Leu  Glu Lys Pro Glu Leu  Leu Val Thr
    1460                 1465                 1470
```

```
Lys Gly  Glu Asp Met Lys Asp  Tyr Met Glu Ser Val  Ile Phe Arg
    1475                 1480                 1485

Tyr Asn  Ser Lys Arg Phe Lys  Glu Ser Leu Ser Ile  Gln Asn Pro
    1490                 1495                 1500

Ala Gln  Leu Phe Ile Glu Gln  Ile Leu Phe Ser His  Lys Pro Ile
    1505                 1510                 1515

Ile Asp  Phe Ser Gly Ile Arg  Asp Lys Tyr Ile Asn  Leu His Asp
    1520                 1525                 1530

Ser Arg  Ala Leu Glu Lys Glu  Pro Asp Ile Leu Gly  Lys Val Thr
    1535                 1540                 1545

Phe Thr  Glu Ala Tyr Arg Leu  Leu Met Arg Asp Leu  Ser Ser Leu
    1550                 1555                 1560

Glu Leu  Thr Asn Asp Asp Ile  Gln Val Ile Tyr Ser  Tyr Ile Ile
    1565                 1570                 1575

Leu Asn  Asp Pro Met Met Ile  Thr Ile Ala Asn Thr  His Ile Leu
    1580                 1585                 1590

Ser Ile  Tyr Gly Ser Pro Gln  Arg Arg Met Gly Met  Ser Cys Ser
    1595                 1600                 1605

Thr Met  Pro Glu Phe Arg Asn  Leu Lys Leu Ile His  His Ser Pro
    1610                 1615                 1620

Ala Leu  Val Leu Arg Ala Tyr  Ser Lys Asn Asn Pro  Asp Ile Gln
    1625                 1630                 1635

Gly Ala  Asp Pro Thr Glu Met  Ala Arg Asp Leu Val  His Leu Lys
    1640                 1645                 1650

Glu Phe  Val Glu Asn Thr Asn  Leu Glu Glu Lys Met  Lys Val Arg
    1655                 1660                 1665

Ile Ala  Ile Asn Glu Ala Glu  Lys Gly Gln Arg Asp  Ile Val Phe
    1670                 1675                 1680

Glu Leu  Lys Glu Met Thr Arg  Phe Tyr Gln Val Cys  Tyr Glu Tyr
    1685                 1690                 1695

Val Lys  Ser Thr Glu His Lys  Ile Lys Val Phe Ile  Leu Pro Thr
    1700                 1705                 1710

Lys Ser  Tyr Thr Thr Thr Asp  Phe Cys Ser Leu Met  Gln Gly Asn
    1715                 1720                 1725

Leu Ile  Lys Asp Lys Glu Trp  Tyr Thr Val His Tyr  Leu Lys Gln
    1730                 1735                 1740

Ile Leu  Ser Gly Gly His Lys  Ala Ile Met Gln His  Asn Ala Thr
```

```
    1745                1750                1755

Ser Glu  Gln Asn Ile Ala Phe  Glu Cys Phe Lys Leu  Ile Thr His
    1760                1765                1770

Phe Ala  Asp Ser Phe Ile Asp  Ser Leu Ser Arg Ser  Ala Phe Leu
    1775                1780                1785

Gln Leu  Ile Ile Asp Glu Phe  Ser Tyr Lys Asp Val  Lys Val Ser
    1790                1795                1800

Lys Leu  Tyr Asp Ile Ile Lys  Asn Gly Tyr Asn Arg  Thr Asp Phe
    1805                1810                1815

Ile Pro  Leu Leu Phe Arg Thr  Gly Asp Leu Arg Gln  Ala Asp Leu
    1820                1825                1830

Asp Lys  Tyr Asp Ala Met Lys  Ser His Glu Arg Val  Thr Trp Asn
    1835                1840                1845

Asp Trp  Gln Thr Ser Arg His  Leu Asp Met Gly Ser  Ile Asn Leu
    1850                1855                1860

Thr Ile  Thr Gly Tyr Asn Arg  Ser Ile Thr Ile Ile  Gly Glu Asp
    1865                1870                1875

Asn Lys  Leu Thr Tyr Ala Glu  Leu Cys Leu Thr Arg  Lys Thr Pro
    1880                1885                1890

Glu Asn  Ile Thr Ile Ser Gly  Arg Lys Leu Leu Gly  Ala Arg His
    1895                1900                1905

Gly Leu  Lys Phe Glu Asn Met  Ser Lys Ile Gln Thr  Tyr Pro Gly
    1910                1915                1920

Asn Tyr  Tyr Ile Thr Tyr Arg  Lys Lys Asp Arg His  Gln Phe Val
    1925                1930                1935

Tyr Gln  Ile His Ser His Glu  Ser Ile Thr Arg Arg  Asn Glu Glu
    1940                1945                1950

His Met  Ala Ile Arg Thr Arg  Ile Tyr Asn Glu Ile  Thr Pro Val
    1955                1960                1965

Cys Val  Val Asn Val Ala Glu  Val Asp Gly Asp Gln  Arg Ile Leu
    1970                1975                1980

Ile Arg  Ser Leu Asp Tyr Leu  Asn Asn Asp Ile Phe  Ser Leu Ser
    1985                1990                1995

Arg Ile  Lys Val Gly Leu Asp  Glu Phe Ala Thr Ile  Lys Lys Ala
    2000                2005                2010

His Phe  Ser Lys Met Val Ser  Phe Glu Gly Pro Pro  Ile Lys Thr
    2015                2020                2025
```

```
Gly Leu  Leu Asp Leu Thr Glu  Leu Met Lys Ser Gln  Asp Leu Leu
    2030                 2035                 2040

Asn Leu  Asn Tyr Asp Asn Ile  Arg Asn Ser Asn Leu  Ile Ser Phe
    2045                 2050                 2055

Ser Lys  Leu Ile Cys Cys Glu  Gly Ser Asp Asn Ile  Asn Asp Gly
    2060                 2065                 2070

Leu Glu  Phe Leu Ser Asp Asp  Pro Met Asn Phe Thr  Glu Gly Glu
    2075                 2080                 2085

Ala Ile  His Ser Thr Pro Ile  Phe Asn Ile Tyr Tyr  Ser Lys Arg
    2090                 2095                 2100

Gly Glu  Arg His Met Thr Tyr  Arg Asn Ala Ile Lys  Leu Leu Ile
    2105                 2110                 2115

Glu Arg  Glu Thr Lys Ile Phe  Glu Glu Ala Phe Thr  Phe Ser Glu
    2120                 2125                 2130

Asn Gly  Phe Ile Ser Pro Glu  Asn Leu Gly Cys Leu  Glu Ala Val
    2135                 2140                 2145

Val Ser  Leu Ile Lys Leu Leu  Lys Thr Asn Glu Trp  Ser Thr Val
    2150                 2155                 2160

Ile Asp  Lys Cys Ile His Ile  Cys Leu Ile Lys Asn  Gly Met Asp
    2165                 2170                 2175

His Met  Tyr His Ser Phe Asp  Val Pro Lys Cys Phe  Met Gly Asn
    2180                 2185                 2190

Pro Ile  Thr Arg Asp Met Asn  Trp Met Met Phe Arg  Glu Phe Ile
    2195                 2200                 2205

Asn Ser  Leu Pro Gly Thr Asp  Ile Pro Pro Trp Asn  Val Met Thr
    2210                 2215                 2220

Glu Asn  Phe Lys Lys Lys Cys  Ile Ala Leu Ile Asn  Ser Lys Leu
    2225                 2230                 2235

Glu Thr  Gln Arg Asp Phe Ser  Glu Phe Thr Lys Leu  Met Lys Lys
    2240                 2245                 2250

Glu Gly  Gly Arg Ser Asn Ile  Glu Phe Asp
    2255                 2260
```

<210> 7
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense primer derived from M segment of LACV genome

<400> 7
cgatcaacaa tccaatgata acaag 25

<210> 8
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Sense primer derived from M segment of LACV genome

<400> 8
tggaaatggc atcgagaata aa 22

<210> 9
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from M segment of LACV genome

<400> 9
attatctcac ctgtatcttg aattatgctg taagctggg 39

<210> 10
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Sense primer derived from S segment of LACV genome

<400> 10
gtctcagcac gagttgatca gaa 23

<210> 11
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense primer derived from S segment of LACV genome

<400> 11
aatggtcagc gggtagaatt tg 22

<210> 12
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 12
tggtgtagga tgggacagtg ggcca 25

<210> 13
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Sense primer derived from L segment of LACV genome

<400> 13
aaagtcgggc ttgacgaatt t 21

<210> 14
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Antisense primer derived from L segment of LACV genome

<400> 14
cggacagaaa ctctaaccca tca 23

<210> 15
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from L segment of LACV genome

<400> 15
cccccaatta agacagggct cctcg 25

<210> 16
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthetic oligonucleotide specific for LACV sequence

<400> 16
catgaggcat tcaaattagg ttcta 25

<210> 17
<211> 174
<212> PRT
<213> La Crosse virus

<400> 17
Val Met Cys Lys Ser Lys Gly Pro Ala Ser Ile Leu Ser Ile Ile Thr
1 5 10 15

Ala Val Leu Val Leu Thr Phe Val Thr Pro Ile Asn Ser Met Val Leu
20 25 30

Gly Glu Ser Lys Glu Thr Phe Glu Leu Glu Asp Leu Pro Asp Asp Met
35 40 45

Leu Glu Met Ala Ser Arg Ile Asn Ser Tyr Tyr Leu Thr Cys Ile Leu
50 55 60

Asn Tyr Ala Val Ser Trp Gly Leu Val Ile Ile Gly Leu Leu Ile Gly
65 70 75 80

Leu Leu Phe Lys Lys Tyr Gln His Arg Phe Leu Asn Val Tyr Ala Met
85 90 95

Tyr Cys Glu Glu Cys Asp Met Tyr His Asp Lys Ser Gly Leu Lys Arg
100 105 110

His Gly Asp Phe Thr Asn Lys Cys Arg Gln Cys Thr Cys Gly Gln Tyr
115 120 125

Glu Asp Ala Ala Gly Leu Met Ala His Arg Lys Thr Tyr Asn Cys Leu
130 135 140

Val Gln Tyr Lys Ala Lys Trp Met Met Asn Phe Leu Ile Ile Tyr Ile
145 150 155 160

Phe Leu Ile Leu Ile Lys Asp Ser Ala Ile Val Val Gln Ala
165 170

<210> 18
<211> 968
<212> PRT
<213> La Crosse virus

<400> 18
Ala Gly Thr Asp Phe Thr Thr Cys Leu Glu Thr Glu Ser Ile Asn Trp
1 5 10 15

Asn Cys Thr Gly Pro Phe Leu Asn Leu Gly Asn Cys Gln Lys Gln Gln

```
            20                  25                  30

Lys Lys Glu Pro Tyr Thr Asn Ile Ala Thr Gln Leu Lys Gly Leu Lys
        35                  40                  45

Ala Ile Ser Val Leu Asp Val Pro Ile Ile Thr Gly Ile Pro Asp Asp
    50                  55                  60

Ile Ala Gly Ala Leu Arg Tyr Ile Glu Glu Lys Glu Asp Phe His Val
65                  70                  75                  80

Gln Leu Thr Ile Glu Tyr Ala Met Leu Ser Lys Tyr Cys Asp Tyr Tyr
                85                  90                  95

Thr Gln Phe Ser Asp Asn Ser Gly Tyr Ser Gln Thr Thr Trp Arg Val
            100                 105                 110

Tyr Leu Arg Ser His Asp Phe Glu Ala Cys Ile Leu Tyr Pro Asn Gln
        115                 120                 125

His Phe Cys Arg Cys Val Lys Asn Gly Glu Lys Cys Ser Ser Ser Asn
    130                 135                 140

Trp Asp Phe Ala Asn Glu Met Lys Asp Tyr Tyr Ser Gly Lys Gln Thr
145                 150                 155                 160

Lys Phe Asp Lys Asp Leu Asn Leu Ala Leu Thr Ala Leu His His Ala
                165                 170                 175

Phe Arg Gly Thr Ser Ser Ala Tyr Ile Ala Thr Met Leu Ser Lys Lys
            180                 185                 190

Ser Asn Asp Asp Leu Ile Ala Tyr Thr Asn Lys Ile Lys Thr Lys Phe
        195                 200                 205

Pro Gly Asn Ala Leu Leu Lys Ala Ile Ile Asp Tyr Ile Ala Tyr Met
    210                 215                 220

Lys Ser Leu Pro Gly Met Ala Asn Phe Lys Tyr Asp Glu Phe Trp Asp
225                 230                 235                 240

Glu Leu Leu Tyr Lys Pro Asn Pro Ala Lys Ala Ser Asn Leu Ala Arg
                245                 250                 255

Gly Lys Glu Ser Ser Tyr Asn Phe Lys Leu Ala Ile Ser Ser Lys Ser
            260                 265                 270

Ile Lys Thr Cys Lys Asn Val Lys Asp Val Ala Cys Leu Ser Pro Arg
        275                 280                 285

Ser Gly Ala Ile Tyr Ala Ser Ile Ile Ala Cys Gly Glu Pro Asn Gly
    290                 295                 300

Pro Ser Val Tyr Arg Lys Pro Ser Gly Gly Val Phe Gln Ser Ser Thr
305                 310                 315                 320
```

```
Asp Arg Ser Ile Tyr Cys Leu Leu Asp Ser His Cys Leu Glu Glu Phe
                325                 330                 335

Glu Ala Ile Gly Gln Glu Glu Leu Asp Ala Val Lys Lys Ser Lys Cys
            340                 345                 350

Trp Glu Ile Glu Tyr Pro Asp Val Lys Leu Ile Gln Glu Gly Asp Gly
        355                 360                 365

Thr Lys Ser Cys Arg Met Lys Asp Ser Gly Asn Cys Asn Val Ala Thr
    370                 375                 380

Asn Arg Trp Pro Val Ile Gln Cys Glu Asn Asp Lys Phe Tyr Tyr Ser
385                 390                 395                 400

Glu Leu Gln Lys Asp Tyr Asp Lys Ala Gln Asp Ile Gly His Tyr Cys
                405                 410                 415

Leu Ser Pro Gly Cys Thr Thr Val Arg Tyr Pro Ile Asn Pro Lys His
            420                 425                 430

Ile Ser Asn Cys Asn Trp Gln Val Ser Arg Ser Ser Ile Ala Lys Ile
        435                 440                 445

Asp Val His Asn Ile Glu Asp Ile Glu Gln Tyr Lys Lys Ala Ile Thr
    450                 455                 460

Gln Lys Leu Gln Thr Ser Leu Ser Leu Phe Lys Tyr Ala Lys Thr Lys
465                 470                 475                 480

Asn Leu Pro His Ile Lys Pro Ile Tyr Lys Tyr Ile Thr Ile Glu Gly
                485                 490                 495

Thr Glu Thr Ala Glu Gly Ile Glu Ser Ala Tyr Ile Glu Ser Glu Val
            500                 505                 510

Pro Ala Leu Ala Gly Thr Ser Ile Gly Phe Lys Ile Asn Ser Lys Glu
        515                 520                 525

Gly Lys His Leu Leu Asp Val Ile Ala Tyr Val Lys Ser Ala Ser Tyr
    530                 535                 540

Ser Ser Val Tyr Thr Lys Leu Tyr Ser Thr Gly Pro Thr Ser Gly Ile
545                 550                 555                 560

Asn Thr Lys His Asp Glu Leu Cys Thr Gly Pro Cys Pro Ala Asn Ile
                565                 570                 575

Asn His Gln Val Gly Trp Leu Thr Phe Ala Arg Glu Arg Thr Ser Ser
            580                 585                 590

Trp Gly Cys Glu Glu Phe Gly Cys Leu Ala Val Ser Asp Gly Cys Val
        595                 600                 605
```

```
Phe Gly Ser Cys Gln Asp Ile Ile Lys Glu Glu Leu Ser Val Tyr Arg
    610                 615                 620

Lys Glu Thr Glu Glu Val Thr Asp Val Glu Leu Cys Leu Thr Phe Ser
625                 630                 635                 640

Asp Lys Thr Tyr Cys Thr Asn Leu Asn Pro Val Thr Pro Ile Ile Thr
                645                 650                 655

Asp Leu Phe Glu Val Gln Phe Lys Thr Val Glu Thr Tyr Ser Leu Pro
            660                 665                 670

Arg Ile Val Ala Val Gln Asn His Glu Ile Lys Ile Gly Gln Ile Asn
        675                 680                 685

Asp Leu Gly Val Tyr Ser Lys Gly Cys Gly Asn Val Gln Lys Val Asn
    690                 695                 700

Gly Thr Ile Tyr Gly Asn Gly Val Pro Arg Phe Asp Tyr Leu Cys His
705                 710                 715                 720

Leu Ala Ser Arg Lys Glu Val Ile Val Arg Lys Cys Phe Asp Asn Asp
                725                 730                 735

Tyr Gln Ala Cys Lys Phe Leu Gln Ser Pro Ala Ser Tyr Arg Leu Glu
            740                 745                 750

Glu Asp Ser Gly Thr Val Thr Ile Ile Asp Tyr Lys Lys Ile Leu Gly
        755                 760                 765

Thr Ile Lys Met Lys Ala Ile Leu Gly Asp Val Lys Tyr Lys Thr Phe
    770                 775                 780

Ala Asp Ser Val Asp Ile Thr Ala Glu Gly Ser Cys Thr Gly Cys Ile
785                 790                 795                 800

Asn Cys Phe Glu Asn Ile His Cys Glu Leu Thr Leu His Thr Thr Ile
                805                 810                 815

Glu Ala Ser Cys Pro Ile Lys Ser Ser Cys Thr Val Phe His Asp Arg
            820                 825                 830

Ile Leu Val Thr Pro Asn Glu His Lys Tyr Ala Leu Lys Met Val Cys
        835                 840                 845

Thr Glu Lys Pro Gly Asn Thr Leu Thr Ile Lys Val Cys Asn Thr Lys
    850                 855                 860

Val Glu Ala Ser Met Ala Leu Val Asp Ala Lys Pro Ile Ile Glu Leu
865                 870                 875                 880

Ala Pro Val Asp Gln Thr Ala Tyr Ile Arg Glu Lys Asp Glu Arg Cys
                885                 890                 895

Lys Thr Trp Met Cys Arg Val Arg Asp Glu Gly Leu Gln Val Ile Leu
```

```
            900                 905                 910

Glu Pro Phe Lys Asn Leu Phe Gly Ser Tyr Ile Gly Ile Phe Tyr Thr
        915                 920                 925

Phe Ile Ile Ser Ile Val Val Leu Leu Val Ile Ile Tyr Val Leu Leu
    930                 935                 940

Pro Ile Cys Phe Lys Leu Arg Asp Thr Leu Arg Lys His Glu Asp Ala
945                 950                 955                 960

Tyr Lys Arg Glu Met Lys Ile Arg
                965
```

<210> 19
<211> 92
<212> PRT
<213> La Crosse virus

<400> 19

```
Met Met Ser His Gln Gln Val Gln Met Asp Leu Ile Leu Met Gln Gly
1               5                   10                  15

Ile Trp Thr Ser Val Leu Lys Met Gln Asn Tyr Ser Thr Leu Leu Gln
            20                  25                  30

Leu Gly Ser Ser Ser Ser Met Pro Gln Arg Pro Arg Leu Leu Ser Arg
        35                  40                  45

Val Ser Gln Arg Gly Arg Leu Thr Leu Asn Leu Glu Ser Gly Arg Trp
    50                  55                  60

Arg Leu Ser Ile Ile Ile Phe Leu Glu Thr Gly Thr Thr Gln Leu Val
65                  70                  75                  80

Thr Thr Ile Leu Pro Ser Thr Asp Tyr Leu Gly Ile
                85                  90
```

<210> 20
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from M segment of the LACV genome

<400> 20
ttgtacaagc tgctggaact gactt 25

<210> 21
<211> 22
<212> DNA

<213> Artificial Sequence

<220>
<223> Forward primer derived from M segment of the LACV genome

<400> 21
tgtggtgccc gctatgatac tt 22

<210> 22
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from M segment of the LACV genome

<400> 22
tgtggtgccc gctatgatac 20

<210> 23
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from M segment of the LACV genome

<400> 23
ctgtggtgcc cgctatgata c 21

<210> 24
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from M segment of the LACV genome

<400> 24
ctgtggtgcc cgctatgata 20

<210> 25
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from M segment of the LACV genome

<400> 25
tctgtggtgc ccgctatgat a 21

<210> 26
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from M segment of the LACV genome

<400> 26
tctgtggtgc ccgctatgat 20

<210> 27
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from M segment of the LACV genome

<400> 27
gtgtctgtgg tgcccgctat 20

<210> 28
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from M segment of the LACV genome

<400> 28
agacagtggc actgtgacca taa 23

<210> 29
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from M segment of the LACV genome

<400> 29
agacagtggc actgtgacca taat 24

<210> 30
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from M segment of the LACV genome

<400> 30
aagacagtgg cactgtgacc ata 23

<210> 31
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from M segment of the LACV genome

<400> 31
aagacagtgg cactgtgacc ataa 24

<210> 32
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from M segment of the LACV genome

<400> 32
aagacagtgg cactgtgacc ataat 25

<210> 33
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from M segment of the LACV genome

<400> 33
gaagacagtg gcactgtgac cata 24

<210> 34
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from M segment of the LACV genome

<400> 34
agaagacagt ggcactgtga ccata 25

<210> 35
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from M segment of the LACV genome

<400> 35
ctgggccatt tttgaacctc gggaa 25

<210> 36
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from M segment of the LACV genome

<400> 36
ctgggccatt tttgaacctc ggga 24

<210> 37
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from M segment of the LACV genome

<400> 37
cactgggcca tttttgaacc tcgg 24

<210> 38
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from M segment of the LACV genome

<400> 38
ctgggccatt tttgaacctc ggg 23

<210> 39
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from M segment of the LACV genome

<400> 39
tgaacctcgg gaattgccaa aagca 25

<210> 40
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from M segment of the LACV genome

<400> 40
tgcactgggc catttttgaa cctcg 25

<210> 41
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from M segment of the LACV genome

<400> 41
actgggccat ttttgaacct cggga 25

<210> 42
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from M segment of the LACV genome

<400> 42
actgggccat ttttgaacct cggg 24

<210> 43
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from M segment of the LACV genome

<400> 43
tgggccattt ttgaacctcg gga 23

<210> 44
<211> 25

<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from M segment of the LACV genome

<400> 44
tgggccattt ttgaacctcg ggaat 25

<210> 45
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from M segment of the LACV genome

<400> 45
cactgggcca tttttgaacc tcggg 25

<210> 46
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from M segment of the LACV genome

<400> 46
tgggccattt ttgaacctcg ggaa 24

<210> 47
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from M segment of the LACV genome

<400> 47
tgtgcaagtc gaaagggcct gca 23

<210> 48
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from M segment of the LACV genome

<400> 48

catgtgcaag tcgaaagggc ctgc 24

<210> 49
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from M segment of the LACV genome

<400> 49
tcatgtgcaa gtcgaaaggg cctg 24

<210> 50
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from M segment of the LACV genome

<400> 50
atgtgcaagt cgaaagggcc tgca 24

<210> 51
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from M segment of the LACV genome

<400> 51
tcatgtgcaa gtcgaaaggg cctgc 25

<210> 52
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from M segment of the LACV genome

<400> 52
taaccgcaga agggtcatgc accg 24

<210> 53
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from M segment of the LACV genome

<400> 53
ccgcagaagg gtcatgcacc g 21

<210> 54
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from M segment of the LACV genome

<400> 54
aaccgcagaa gggtcatgca ccg 23

<210> 55
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from M segment of the LACV genome

<400> 55
ataaccgcag aagggtcatg caccg 25

<210> 56
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from M segment of the LACV genome

<400> 56
accgcagaag ggtcatgcac cg 22

<210> 57
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from M segment of the LACV genome

<400> 57
cagaagggtc atgcaccggc tgt 23

<210> 58
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from M segment of the LACV genome

<400> 58
cgcagaaggg tcatgcaccg g 21

<210> 59
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from M segment of the LACV genome

<400> 59
agtcccttta actgagttgc aatgt 25

<210> 60
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from M segment of the LACV genome

<400> 60
aaggttaaga ccagtaccgc agtaa 25

<210> 61
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from M segment of the LACV genome

<400> 61
gtgtgcaacg ttaattcgca at 22

<210> 62
<211> 22
<212> DNA
<213> Artificial Sequence

<220>

<223> Reverse primer derived from M segment of the LACV genome

<400> 62
tgtggtgtgc aacgttaatt cg 22

<210> 63
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from M segment of the LACV genome

<400> 63
tcaattgtgg tgtgcaacgt ta 22

<210> 64
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from M segment of the LACV genome

<400> 64
tcaattgtgg tgtgcaacgt taa 23

<210> 65
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from M segment of the LACV genome

<400> 65
tcaattgtgg tgtgcaacgt t 21

<210> 66
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from M segment of the LACV genome

<400> 66
tcaattgtgg tgtgcaacgt taat 24

<210> 67

<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from the S segment of the LACV genome

<400> 67
tctcagcacg agttgatcag aac 23

<210> 68
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from the S segment of the LACV genome

<400> 68
ctcagcacga gttgatcaga aca 23

<210> 69
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from the S segment of the LACV genome

<400> 69
tcagcacgag ttgatcagaa caa 23

<210> 70
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from the S segment of the LACV genome

<400> 70
tctacccgct gaccattgga at 22

<210> 71
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from the S segment of the LACV genome

<400> 71
gagtgtgatg tcggatttgg tgtt 24

<210> 72
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from the S segment of the LACV genome

<400> 72
agtctcagca cgagttgatc agaa 24

<210> 73
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from the S segment of the LACV genome

<400> 73
gtctcagcac gagttgatca gaac 24

<210> 74
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from the S segment of the LACV genome

<400> 74
tctcagcacg agttgatcag aaca 24

<210> 75
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from the S segment of the LACV genome

<400> 75
ctcagcacga gttgatcaga acaa 24

<210> 76
<211> 22
<212> DNA

<213> Artificial Sequence

<220>
<223> Forward primer derived from the S segment of the LACV genome

<400> 76
tcagcacgag ttgatcagaa ca 22

<210> 77
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from the S segment of the LACV genome

<400> 77
tctacccgct gaccattgga a 21

<210> 78
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from the S segment of the LACV genome

<400> 78
tacccgctga ccattggaat tc 22

<210> 79
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from the S segment of the LACV genome

<400> 79
caagagtgtg atgtcggatt tggt 24

<210> 80
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from the S segment of the LACV genome

<400> 80
aagagtgtga tgtcggattt ggt 23

<210> 81
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from the S segment of the LACV genome

<400> 81
cctgatgcag ggtatatgga ctt 23

<210> 82
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from the S segment of the LACV genome

<400> 82
tgcagggtat atggacttct gtgt 24

<210> 83
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from the S segment of the LACV genome

<400> 83
gatgagtctc agcacgagtt gatc 24

<210> 84
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from the S segment of the LACV genome

<400> 84
gagtctcagc acgagttgat cagaa 25

<210> 85
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from the S segment of the LACV genome

<400> 85
agtctcagca cgagttgatc agaac 25

<210> 86
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from the S segment of the LACV genome

<400> 86
tctacccgct gaccattgga 20

<210> 87
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from the S segment of the LACV genome

<400> 87
ctacccgctg accattggaa t 21

<210> 88
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from the S segment of the LACV genome

<400> 88
cgctgaccat tggaattcac a 21

<210> 89
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from the S segment of the LACV genome

<400> 89
cctgatgcag ggtatatgga cttc 24

<210> 90
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from the S segment of the LACV genome

<400> 90
atgcagggta tatggacttc tgtgt 25

<210> 91
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 91
caagcaaggc atgatggacc ctcaa 25

<210> 92
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 92
tcaagcaagg catgatggac cctca 25

<210> 93
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 93
tgtcgcatca acaggtgcaa atgga 25

<210> 94
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 94
caatgccgca aaggccaagg c 21

<210> 95
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 95
atgccgcaaa ggccaaggct gct 23

<210> 96
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 96
ccgcaaaggc caaggctgct ct 22

<210> 97
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 97
ccgcaaaggc caaggctgct ctct 24

<210> 98
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 98
atgccgcaaa ggccaaggct g 21

<210> 99
<211> 21

<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 99
tgccgcaaag gccaaggctg c 21

<210> 100
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 100
caatgccgca aaggccaagg ctg 23

<210> 101
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 101
aggccaaggc tgctctctcg cgta 24

<210> 102
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 102
cgcaaaggcc aaggctgctc tct 23

<210> 103
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 103

ccaaggctgc tctctcgcgt aagc 24

<210> 104
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 104
caaaggccaa ggctgctctc tcgc 24

<210> 105
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 105
aggccaaggc tgctctctcg cg 22

<210> 106
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 106
aaaggccaag gctgctctct cgcgt 25

<210> 107
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 107
cttcctcaat gccgcaaagg cca 23

<210> 108
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 108
tcttcctcaa tgccgcaaag gcc 23

<210> 109
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 109
aaggccaagg ctgctctctc gcgt 24

<210> 110
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 110
tcttcctcaa tgccgcaaag gcca 24

<210> 111
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 111
tcttcttcct caatgccgca aaggc 25

<210> 112
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 112
tcaatgccgc aaaggccaag gc 22

<210> 113
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 113
ttcttcctca atgccgcaaa ggcca 25

<210> 114
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 114
cctcaatgcc gcaaaggcca agg 23

<210> 115
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 115
cttcctcaat gccgcaaagg ccaag 25

<210> 116
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 116
ttcttcctca atgccgcaaa ggcc 24

<210> 117
<211> 23
<212> DNA
<213> Artificial Sequence

<220>

<223> Probe derived from S segment of LACV genome

<400> 117
ctcaatgccg caaaggccaa ggc 23

<210> 118
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 118
ttcctcaatg ccgcaaaggc caa 23

<210> 119
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 119
tcctcaatgc cgcaaaggcc aag 23

<210> 120
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 120
tcctcaatgc cgcaaaggcc a 21

<210> 121
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 121
tcaatgccgc aaaggccaag gct 23

<210> 122

<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 122
caatgccgca aaggccaagg ct 22

<210> 123
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 123
cttcttcctc aatgccgcaa aggcc 25

<210> 124
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 124
ctcaatgccg caaaggccaa gg 22

<210> 125
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 125
aatgccgcaa aggccaaggc tg 22

<210> 126
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 126
atgccgcaaa ggccaaggct gc 22

<210> 127
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 127
tgccgcaaag gccaaggctg 20

<210> 128
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 128
ctcaatgccg caaaggccaa ggct 24

<210> 129
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 129
cctcaatgcc gcaaaggcca ag 22

<210> 130
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 130
cttcctcaat gccgcaaagg ccaa 24

<210> 131
<211> 25
<212> DNA

<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 131
tcttcctcaa tgccgcaaag gccaa 25

<210> 132
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 132
tcctcaatgc cgcaaaggcc aa 22

<210> 133
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 133
ttcctcaatg ccgcaaaggc ca 22

<210> 134
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 134
ttcctcaatg ccgcaaaggc caag 24

<210> 135
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 135
aggccaaggc tgctctctcg cgt 23

<210> 136
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 136
caaggctgct ctctcgcgta agcca 25

<210> 137
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 137
ccaaggctgc tctctcgcgt aagcc 25

<210> 138
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 138
aggccaaggc tgctctctcg cgtaa 25

<210> 139
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 139
ccgcaaaggc caaggctgct c 21

<210> 140
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 140
aaggctgctc tctcgcgtaa gccag 25

<210> 141
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 141
aaggctgctc tctcgcgtaa gcca 24

<210> 142
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 142
caaggctgct ctctcgcgta agcc 24

<210> 143
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 143
cgcaaaggcc aaggctgctc tc 22

<210> 144
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 144
ccgcaaaggc caaggctgct ctc 23

<210> 145
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 145
aaggccaagg ctgctctctc gcgta 25

<210> 146
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 146
aaggccaagg ctgctctctc gcg 23

<210> 147
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 147
cgcaaaggcc aaggctgctc tctc 24

<210> 148
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe derived from S segment of LACV genome

<400> 148
aaaggccaag gctgctctct cgcg 24

<210> 149
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from S segment of LACV genome

<400> 149
caatggtcag cgggtagaat tt 22

<210> 150
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from S segment of LACV genome

<400> 150
ccaatggtca gcgggtagaa tt 22

<210> 151
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from S segment of LACV genome

<400> 151
tccaatggtc agcgggtaga at 22

<210> 152
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from S segment of LACV genome

<400> 152
tccttcaggc tcttagcaat tgc 23

<210> 153
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from S segment of LACV genome

<400> 153
ctttgcggca ttgaggaaga ag 22

<210> 154
<211> 22

<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from S segment of LACV genome

<400> 154
atggtcagcg ggtagaattt ga 22

<210> 155
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from S segment of LACV genome

<400> 155
ccaatggtca gcgggtagaa t 21

<210> 156
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from S segment of LACV genome

<400> 156
tccaatggtc agcgggtaga a 21

<210> 157
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from S segment of LACV genome

<400> 157
tccaatggtc agcgggtaga 20

<210> 158
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from S segment of LACV genome

<400> 158

catccttcag gctcttagca attg 24

<210> 159
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from S segment of LACV genome

<400> 159
tgcggcattg aggaagaaga t 21

<210> 160
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from S segment of LACV genome

<400> 160
ttgcggcatt gaggaagaag 20

<210> 161
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from S segment of LACV genome

<400> 161
ctttgcggca ttgaggaaga a 21

<210> 162
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from S segment of LACV genome

<400> 162
gccactctcc aaatttaggg ttag 24

<210> 163
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from S segment of LACV genome

<400> 163
cacctgccac tctccaaatt tag 23

<210> 164
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from S segment of LACV genome

<400> 164
tcagcgggta gaatttgaaa gtt 23

<210> 165
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from S segment of LACV genome

<400> 165
tggtcagcgg gtagaatttg aa 22

<210> 166
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from S segment of LACV genome

<400> 166
atggtcagcg ggtagaattt gaa 23

<210> 167
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from S segment of LACV genome

<400> 167
aatggtcagc gggtagaatt tga 23

<210> 168
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from S segment of LACV genome

<400> 168
caatggtcag cgggtagaat ttg 23

<210> 169
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from S segment of LACV genome

<400> 169
ccaatggtca gcgggtagaa 20

<210> 170
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from S segment of LACV genome

<400> 170
atccttcagg ctcttagcaa ttgc 24

<210> 171
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from S segment of LACV genome

<400> 171
tctacatcct tcaggctctt agca 24

<210> 172
<211> 23
<212> DNA
<213> Artificial Sequence

<220>

<223> Reverse primer derived from S segment of LACV genome

<400> 172
acctgccact ctccaaattt agg 23

<210> 173
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from L segment of LACV genome

<400> 173
taaagtcggg cttgacgaat tt 22

<210> 174
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from L segment of LACV genome

<400> 174
ttaaagtcgg gcttgacgaa tt 22

<210> 175
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from L segment of LACV genome

<400> 175
ttaaagtcgg gcttgacgaa ttt 23

<210> 176
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from L segment of LACV genome

<400> 176
attaaagtcg ggcttgacga att 23

<210> 177

<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from L segment of LACV genome

<400> 177
attaaagtcg ggcttgacga attt 24

<210> 178
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from L segment of LACV genome

<400> 178
gattaaagtc gggcttgacg aa 22

<210> 179
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from L segment of LACV genome

<400> 179
gattaaagtc gggcttgacg aat 23

<210> 180
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from L segment of LACV genome

<400> 180
gattaaagtc gggcttgacg aatt 24

<210> 181
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from L segment of LACV genome

<400> 181
gattaaagtc gggcttgacg aattt 25

<210> 182
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from L segment of LACV genome

<400> 182
caaggattaa agtcgggctt ga 22

<210> 183
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from L segment of LACV genome

<400> 183
caaggattaa agtcgggctt gac 23

<210> 184
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from L segment of LACV genome

<400> 184
tcaaggatta aagtcgggct tga 23

<210> 185
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Forward primer derived from L segment of LACV genome

<400> 185
tcaaggatta aagtcgggct tgac 24

<210> 186
<211> 24
<212> DNA

<213> Artificial Sequence

<220>
<223> Forward primer derived from L segment of LACV genome

<400> 186
ttcaaggatt aaagtcgggc ttga 24

<210> 187
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from L segment of LACV genome

<400> 187
cggacagaaa ctctaaccca tcat 24

<210> 188
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from L segment of LACV genome

<400> 188
cggacagaaa ctctaaccca tcatt 25

<210> 189
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from L segment of LACV genome

<400> 189
tcggacagaa actctaaccc atca 24

<210> 190
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from L segment of LACV genome

<400> 190
tcggacagaa actctaaccc atcat 25

<210> 191
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Reverse primer derived from L segment of LACV genome

<400> 191
atcggacaga aactctaacc catca 25